

### **REMARKS**

Prior to entry of this amendment, claims 1-24 are currently pending in the subject application. Claims 12-24 are withdrawn from consideration. Claims 1 and 5 are the only pending independent claims.

#### **A. Introduction**

In the outstanding Office action, the Examiner rejected claims 1 and 5-8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Publication No. 2002/0072191 to Aoki et al. ("the Aoki et al. reference"); and rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Aoki et al. reference in view of U.S. Patent Publication No. 2001/00544730 to Kim et al. ("the Kim et al. reference").

#### **B. Applicant Initiated Interview Summary**

On April 24, 2007, an applicant initiated interview summary was conducted. Applicants appreciate the courtesies extended to applicants' representative by Examiner Jarrett Stark and Primary Examiner Michelle Estrada during the April 24, 2007 personal interview. As required by 37 C.F.R. § 1.133(b), applicants' summary of the interview is as follows:

##### **1. Brief Description of any Exhibit Shown**

No exhibit was shown or demonstrated during the April 24, 2007 interview.

##### **2. Identification of the Claims Discussed**

The Examiners and applicants' representative discussed representative independent claims 1 and 5.

##### **3. Identification of the Specific Prior Art Discussed**

The Examiner and applicants' representative discussed the Aoki et al. reference.

4. Identification of the Proposed Amendments

No amendments to the claims were proposed during the April 24, 2007 personal interview.

5. Summary of the Arguments Presented to the Examiner

Applicants' representative presented arguments concerning the "lower electrode" feature of applicants' independent claims, and the failure of the Aoki et al. reference to disclose each and every feature of the independent claims. More particularly, applicants' representative argued that the Aoki et al. reference fails to disclose or suggest the combination of features recited in, e.g., independent claims 1 and 5 including, *inter alia*,

an upper electrode formed on the dielectric layer, wherein the lower electrode includes: a first metal layer having a cylindrical shape and defining a cylindrical space; and a second metal layer completely filling the cylindrical space defined by the first metal layer.

6. General Indication of Other Pertinent Matters Discussed

No other pertinent matters were discussed.

7. General Outcome of the Interview

Examiners Stark and Estrada agreed that the Aoki et al. reference does not suggest or render obvious the subject matter of applicants' independent claims. However, the Examiners maintained that an updated search may be necessary before determining the allowability of the claims.

C. Asserted Anticipation Rejection of Claims 1 and 5-8

In the outstanding Office action, the Examiner rejected claims 1 and 5-8 under 35 U.S.C. § 102(b) as being anticipated by the Aoki et al. reference. The rejection is respectfully traversed for at least the following reasons.

Applicants respectfully submit that the Aoki et al. reference fails to disclose or suggest the combination of features recited in independent claims 1 and 5 including, *inter alia*:

a lower electrode;  
a dielectric layer formed on the lower electrode; and  
an upper electrode formed on the dielectric layer,  
wherein the lower electrode includes:  
a first metal layer having a cylindrical shape and defining a  
cylindrical space; and  
a second metal layer completely filling the cylindrical space  
defined by the first metal layer.

Page 3 of the Office action identifies the capacitor insulating film 7 of the Aoki et al. reference as the “dielectric layer” feature of claims 1 and 5, and the upper electrode film 8 of the Aoki et al. reference as both the “upper electrode formed on the dielectric layer” feature and the “second metal layer completely filling the cylindrical space defined by the first metal layer” feature of applicants’ independent claims 1 and 5.

As discussed during the personal interview, applicants respectfully disagree. Independent claims 1 and 5 each explicitly include a lower electrode including a first metal layer having a cylindrical shape and defining a cylindrical space and a second metal layer completely filling the cylindrical space, a dielectric layer on the lower electrode and an upper electrode on the dielectric layer. The upper electrode 8 of the Aoki et al. reference cannot correspond to both the upper electrode feature and the second metal layer of the lower electrode features of claims 1 and 5, and thus, the Aoki et al. reference fails to disclose or suggest a lower electrode including a first metal layer and a second metal layer having all the characteristics recited in each of those claims.

For at least these reasons, as agreed during the personal interview, the Aoki et al. reference does not disclose or suggest the combination of features recited in independent claims

1 and 5, as well as all the features recited in claims 6-8, which directly or indirectly depend from claim 5. It is respectfully requested that the rejection be withdrawn.

D. Asserted Obviousness Rejection of Claims 2-4 and 9-11

In the outstanding Office action, the Examiner rejected claims 2-4 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over the Aoki et al. reference in view of the Kim et al. reference. The rejection is respectfully traversed for at least the following reasons.

As discussed above with regard to independent claims 1 and 5, from which claims 2-4 and 9-11 respectively depend, the Aoki et al. reference fails to disclose or suggest all the features of claims 1 and 5. Applicants submit that the Kim et al. reference fails to overcome the deficiencies of the Aoki et al. reference, as applied to claims 1 and 5. It is respectfully requested that the rejection be withdrawn.

E. Rejoinder

Upon allowance of independent device claims 1 and/or 5, applicants request rejoinder of non-elected method claims 12-24, including independent method claims 12 and 18, which recite formation of the structural features of independent device claims 1 and/or 5.

F. Conclusion

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

LEE & MORSE, P.C.

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PETITION and  
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.